

The CITIZENS of *Bristol*.

GENTLEMEN,

CANDIDUS, a Well-wisher to the Public, merits their Thanks for his Letter in last Saturday's Journal.----Permit, Gentlemen, one, who has also the same Object in View, and an Advocate for the present Scheme, to offer his Thoughts by Way of Reply.

First, The Assemblage of Nastiness, as dead Dogs, Garbage, &c. in a River, are generally conceived to be no Ways prejudicial to its Water: Many Brewers, Distillers, Sugar-bakers, Malsters, &c. prefer the Thames Water to others; Ships Crews think it the best for Drinking of any; it is remarkable for keeping sweet many Years, and greatly esteemed abroad.----Flesh, Blood, and Garbage may rot and waste in Water, by Time and Fish; but apprehend no Putrefaction ensues in that Element 'till exposed to the Air: The Flood Tides now help forward this Garbage, &c. to the several Brewers, Distillers, Sugar-bakers, Malsters, &c. in Redcliff, Thomas, and Temple Parishes; but I had near forgot to tell those Gentlemen, that when the Dam is made, they will forever loose said Garbage, &c. as it will go to Sea, and cannot make up Stream: However, they will have this Benefit from the Dam: The Water will be near at Hand at all Times, clearer and less saline.

Secondly, The Lightermen, in fetching Stones from below the Hot-wells, cannot be detrimented; they now go down with the Ebb, and return with the Flood, so they may then.

Thirdly, The Quantity of fresh Water continually gliding on from Hanham to Bristol, and over the Dam Ware (or through its Hatches) then to Kingroad, will be the same as now; which Quantity of Water seems to me to be a Moiety of that which supplies the Thames; having last Month spent many Days at Kingston (opposite Richmond and Hampton-Court), walking Miles up the River, making Observations: Hence I conclude that the Thames, at that Place, was not in Width equal to our Channel when ponded up, and that its Velocity or Current did not exceed Two Miles and a Half an Hour; a Confirmation of which appeared in six Horses halling Vessels of sixty or eighty Tons against the Stream. Now, suppose our Channel's Surface, at low Water, runs of fresh Water four Miles an Hour; and its Surface, when ponded up, four Times enlarged, then our continual Current will be equal to one Mile an Hour: So that to call our River, when damed up, a dead Pool, is absurd. Moreover, the Quantity of fresh Water that runs continually from the Avon into the Sea (in the Summer Months) is as much as four Mills can vent, *i. e.* equal to One Hundred and Twenty Tons every Minute.

Fourthly, The Water ponded up, will, no Doubt, be liable to be frozen over in hard Winters, as the Thames or other Rivers: I have seen in America fifty Ships frozen up, so that Waggon's have passed over the Ice, and, from a fortunate Rise of Water, it broke the Ice, and set them at Liberty to push out to Sea.----Our River's Situation, in Respect to the Annoyance by Ice, is beyond others; for the Construction of its Gates, &c. are such as to raise or fall our River two or three Feet at Pleasure, and so prevent the strong Glacification of Ice.

Fifthly,

Fifthly, The Navigation to Bath will be much benefitted, as it can at all Times be performed by Oars, Sails, or Halling, with great Pleasure and Safety. The great Freshes which now run six Miles an Hour down the River, will then be but two, as its Surface will be enlarged, when pounded up, three Times more than its present.

Sixthly, The Generality of Common-Sewers will not be affected by pounding up the River; better, wholesomer, and less subject to gleg or fill up were they so: Those Sewers that are lowest may perhaps have two Feet Water; if these chance to gleg the Proprietors can, at any Time, lay them dry, and, for a trifling Expence, clear them.

Seventhly, The Plan exhibited shuts out all Sea-Water, is furnished with a Ware and Hatches abundantly sufficient to carry off the greatest Flood, and at any requisite Time to make a Scour.

Eighthly, Two Dams (of those I have built) at Warmly and Bitton, I think, are each of them wider than the intended one over the River, and near its Altitude, consequently the Pressure of Water against them near equal to this of the Dam now intended; their Bases for Resistance but twenty-five Feet; this Dam, according to the Plan, has its Base 140 Feet; greatly more than is necessary: But as the extra Strength serves for a Conveniency to take off the surplus Clay dug from the Foundations and Chamber, so construct it thus large.

Ninthly, Over Warmly and Bitton Dams run very rapid Floods; the former has been fifteen Years in Use: The Gleg or Filling up, although not half a Mile long and generally no Current, is scarcely perceptible.----Some Dams on the River Avon have been in Use one hundred Years, and no sensible Filling up.----Why then should we conjecture any Inconvenience by Fillings up of the River from this Dam, as it has its Vent more than adequate?

Tenthly, I am sorry to hear some Gentlemen express themselves with so much Warmth against the intended beneficial Scheme, by saying it will sap and undermine the Foundations of all the Houses on the Key, Marsh-Street, Square, Broad-Mead, &c. fill their Cellars with Water, break down the Banks of the River, and overflow the Country. This, indeed, is the present Case which every high Spring Tide exposes us to, and must of Consequence follow, as the Tides now rise over the Key, and its Banks, higher by perhaps four Feet than the Foundation of said Houses, Cellars, &c. But all these Inconveniences will be totally at an End, and the Key, Square, with its Cellars, Meadows, &c. rendered dry and healthy. By the Construction of the Dam and Ware nine Feet Altitude of Water will be always taken off, and the River never suffered (or can in the Nature of Things) rise higher than the ten Feet Mark at the Draw-Bridge, whereas it now rises every high Spring Tide to eighteen or twenty Feet.

Eleventhly, Much has been said about the Difficulty and Hindrance of Ships in their Passage from Kingroad to the Dam or Chamber.---The present Manner of bringing Ships of Burthen from Kingroad to the Key of Bristol I take to be thus.---All Pilots of Ships wait at Kingroad one or one and a Half Hours Flood, before they proceed, saying, That if they go sooner, they shall not have Water enough at the Key or Wharfs in Bristol: Then take from two to three Hours to bring the Ship up, (but if the Wind sets hard against them in their Passage, they return back to Hungroad, Broad Pill, or Kingroad) by this Time the Flood Tide is near high Water, so that they take four Hours of the Flood to bring Ships from Kingroad to Bristol. When the Dam and Chamber is constructed, the Velocity of the Flood Tide will not be impeded until it touches the Dam, and but little at half Flood, when there will be fifteen Feet of Water in the Chamber, (or seven Feet at the Gibb were there no Dam) all Ships should at this Time be arrived from Kingroad into the Chamber, which is near two Hours before high Water (or one Hour and Half sooner than they now do to Bristol), so that they have two Hours to sport with, and may then, if they happen to be detained, enter



ter the Chamber. Ships that go down may proceed to Sea-Mills, if not to Hungroad, before the Tide turns: Hence will ensue many Advantages and Safety to the Shipping and Navigation, by the intended Scheme.

Twelfthly, Mr. MYLNS has given a Report that Hanham-Mills will be ruined: I have some Hope to the Contrary; but cannot assert it 'till the Spirit Level now undertaking, has determined the Altitude at the Water-Works and Hanham-Mills.----The Level of Mr. MYLNS's ordering, taken from the Level-Heights of the Tides, being, in my Opinion, not to be depended on, as the Velocity of the Flood pushes forward a Head of Water higher at the given Point of Hanham Mills, than when the Water is quiet and level.

Thirteenthly, Mr. MYLNS has pointed out, That our Docks may be relieved from the Water (they take in upon opening the Gates) by Pumps, at a light Expence. I must beg Leave to dissent therefrom, thinking the Expedient no Ways eligible, or the Expence bareable. Apply either Human, Animal, Mechanical Strength or Power, it seems to me the Expence will amount to three Farthings or one Penny per Ton, and that the cheapest Method to get over this Damage to the several Docks, is by making a Cut and arching it from the Tail of the Dam up to Trim Mills, which may be done at an Expence of 2500l.

If I mistake not, Mr. TEAST'S Dock contains of Water	-	2800 Tons
Mr. MATTHEWS'S	- - - - -	2400
Mr. TOMBS'S	- - - - -	1050
Mr. JOYNER'S	- - - - -	1200
And my Dock	- - - - -	6700

The Dock Holders would be pleased, if in the Act it was inserted, That no Ship should heave down, or be careen'd in the River (as it would be a public Nuisance) but should enter the Dock for that Purpose.

Fourteenthly, I can no Ways account for Mr. MYLNS's Charge of between fifty-five and sixty-five Thousand Pounds, as He grants that the Expence of the Dam, Gates, &c. to be but 35,000l. Whence arises the twenty or thirty Thousand additional? Sure a Moiety thereof will be sufficient for to make good Damages to Hanham Mills, (should they be destroy'd) Water Works, Bridewell Mills, Docks, &c. which will bring the whole Expence within 50,000l.

Having thus exposed my Thoughts to the Public, hope they will correct what may be wrong either in Calculation or Judgment, being sensible no Time of Life, or Progress in Experience, is beyond Improvement, and that it is the Duty of every Individual, that wishes Prosperity to the City of Bristol, to assist in forwarding this apparent beneficial, and eligible Scheme for making our present contemptible Channel the best Harbour in Europe; so that the British Navy may enter with Safety, secured from Swells, Wind and Tide, and, after twelve Hours Departure, be plowing the Western Seas.

COLLEGE-GREEN,
Jan. 19, 1767.

WILLIAM CHAMPION.

MR. CHAMPION'S

ADDRESS

TO THE

CITIZENS OF BRISTOL.

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